

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
7 October 2004 (07.10.2004)

PCT

(10) International Publication Number
WO 2004/084685 A1

(51) International Patent Classification⁷: **A47G 23/08**

(21) International Application Number:
PCT/GB2004/001388

(22) International Filing Date: 25 March 2004 (25.03.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data: 25 March 2003 (25.03.2003) GB 0306803.8

(71) Applicant and
(72) Inventor: DICKENS, Anthony [GB/GB]; Unit 8a, 20-30 Wilds Rents, London SE1 4QG (GB).

(74) Agents: GREY, Ian et al.; Venner, Shipley LLP, 20 Little Britain, London EC1A 7DH (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

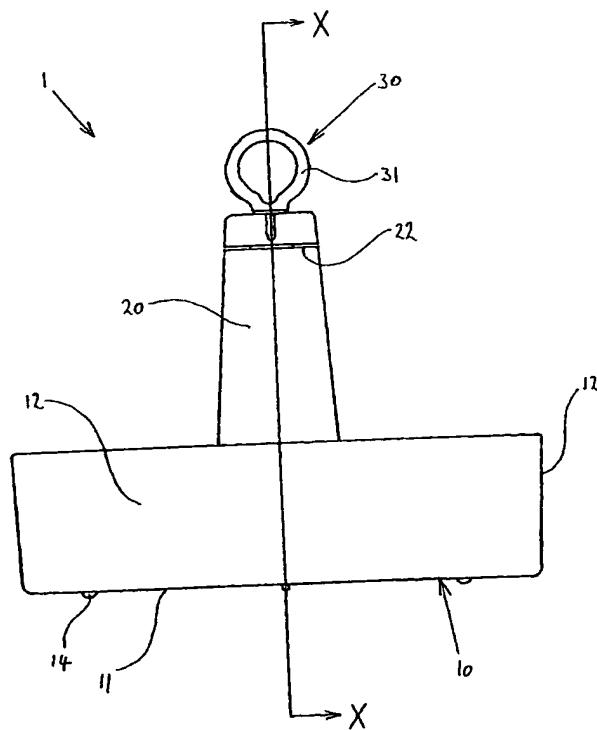
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

[Continued on next page]

(54) Title: TRAY



WO 2004/084685 A1

(57) Abstract: A tray (1) having a handle portion (20) and a peripheral base (10) surrounding the handle portion (20) to support items placed on the tray (1). The handle portion (20) protrudes upwardly from the centre of the peripheral base (10) and comprises a post (22) with a lifting handle (30) on the top thereof. A wall (12) extends upwardly from the perimeter of the base (10) to help retain items placed on the base (10).

WO 2004/084685 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

JC05 Rec'd PCT/PTO 22 SEP 2009

C/PK/S

Tray**Description**

5 The present invention relates to a tray that can be held with one hand, which can securely retain items placed thereon and which can be stacked with other such trays.

Many different types of trays are known that are used to transport a plurality of items, for example drinks to and from tables in bars or restaurants. However, all 10 such known trays suffer a number of disadvantages. One is that they are flat and must be held either by their edges or underneath, which means that carrying drinks can be precarious and require delicate balance, especially in crowded environments, such as the bars and restaurants that they are most commonly used. Also, holding the tray by the edges requires both hands to keep it as steady as possible, so does 15 not leave the user with a free hand for any other purposes. Another disadvantage is the lateral dimensions of such trays. Usually they are wide, which means that they are vulnerable to knocks when being carried through crowds, and because they are flat, the drinks supported thereon have no means of lateral stabilisation to prevent them falling over if they are subjected to a knock.

20 Therefore, there exists a need to provide a tray to carry a plurality of drinks easily, with one hand, and with which the drinks being transported are less vulnerable to spillage or falling over, to substantially alleviate or overcome the problems mentioned above.

25 According to the present invention therefore, there is provided a tray having a handle portion and a peripheral base surrounding the handle portion to support items placed on the tray, the handle portion protruding upwardly from the peripheral base.

30 In a preferred embodiment, the base has a wall extending substantially vertically upwards from the perimeter of the base to prevent items from falling off the base.

Preferably, the handle portion comprises a post extending vertically upwards from the centre of the base and a lifting handle located at the top of said post. Advantageously, the top of the post is vertically higher than the top of the wall, and the post preferably tapers inwardly towards its top. Conveniently, the post is 5 hollow.

In a preferred embodiment, the base portion has an aperture in the centre thereof of the same dimensions as the area of the base of the post such that the hollow interior of the post is accessible from the underside of the base through said 10 aperture.

Preferably, the top of the post has an aperture therein. In a preferred embodiment, the lifting handle comprises a circular hoop portion, a shaft portion connected to the hoop portion, and a snap-fit connection on the other end of the shaft distal 15 from the hoop, the snap-fit connection conveniently comprising a plurality of resiliently deformable arms extending parallel to each other in the axial direction of the shaft, an end of each arm distal from the shaft having a projection extending laterally outwards from the arm.

20 The hoop portion, the shaft and the snap-fit connection means are preferably all integrally formed. Conveniently, the base portion is circular, and the post is preferably also circular in cross-section.

25 A preferred embodiment includes a rotatable collar between the post and the lifting handle. Conveniently, the collar has a central aperture therethrough to receive the shaft of the lifting handle to retain the collar in position between the post and the lifting handle. Preferably, the collar has markings on the outer surface thereof and is preferably circular.

30 In a preferred embodiment, the base portion has a plurality of feet on the underside thereof, which are conveniently formed integrally with the base.

The base, the post and the wall are preferably all formed as one unitary component. Alternatively, the tray could exclude a collar, and entire tray could be formed as one single unitary component. In either embodiment, the unitary component can advantageously be moulded, and is conveniently made from plastic, glass, a wood derivative or resin. Alternatively, the tray can be made from metal, wood.

A preferred embodiment of the present invention will now be described, by way of example only, with reference to the following drawings, in which:

- 10 Figure 1 shows a side view of a carrying tray according to the invention;
- Figure 2 is a plan view from above of the tray shown in Figure 1;
- Figure 3 is a cross sectional side view of the tray along the line X – X;
- Figure 4 is a cross sectional side view of the tray along the line Y – Y;
- Figure 5 is an exploded cross sectional side view of the tray along the line Y – Y;
- 15 and
- Figure 6 is a cross sectional side view of two of the trays of the invention stacked one on top of the other.

Referring now to the drawings, there is shown a carrying tray 1 of the present invention comprising a base portion 10, a central post portion 20 and a lifting handle 30. The base portion 10 is circular, and has a floor 11 and a wall 12 extending upwardly from the perimeter thereof. The post 20 is attached to the centre of the floor 11 of the base 10, and extends upwardly therefrom above the level of the top of the perimeter wall 12. The post 20 is hollow to define a central cavity 21, and is inwardly tapered towards its top 22. The base 10 has a circular hole 13 in its middle beneath the circular base of the post 20, so that the central cavity 21 in the post 20 is accessible from underneath the base portion 10 through the circular hole 13. The top 22 of the post 20 has a central circular hole 23 therein extending through to communicate with the cavity 21, the hole 23 having a peripheral lip 23a extending from the edge thereof, parallel to the axis of the hole 23, into the central cavity 21 (see Figure 5).

The lifting handle 30 comprises a hoop portion 31 connected to one end of a circular shaft 32, the other end of the shaft 32 having a snap-fit connection 33 formed thereon. Said snap-fit connection comprises two parallel resiliently deflectable arms 34 that extend from said other end of the shaft 32 in the axial direction of the shaft 32. Each arm 34 has a step 34a that projects laterally outwards from near the end of the arm 34 distal from the shaft 32, and then tapers back inwardly further towards said distal end.

The handle 30 can be snap-fitted to the hollow post 20 as shown in Figures 3 and 4 by pushing the arms 34 through the hole 23 in the top of the post 20, such that the tapered ends of the arms 34 contact the inside edge of the hole 23 and cause the arms 34 to be deflected inwardly until the steps 34a pass through the hole, and spring back to their normal undeflected position in which the steps 34a abut the lip 23a of the hole 23 and so hold the lifting handle 30 connected to the post 20.

A circular collar 40 is positionable between the handle hoop portion 31 and the top 22 of the hollow post 20, and has a central hole 41 therethrough dimensioned such that the shaft 32 of the handle portion 30 can pass through said hole 41 to retain the collar 40 in position. The collar 40 is freely rotatable about the shaft 32 relative to the handle 30 and to the post 20.

The underside of the floor 11 of the base 10 has feet 14 projecting therefrom, which are integrally moulded with the base 10.

In use, items such as drinks containers are placed on the floor 11 of the base portion 10 so that the perimeter wall 12 can contact the sides of the containers and laterally restrain them. The tray 1 can then be lifted with one hand by the user putting at least one finger through the hoop portion 31 of the lifting handle 30, and thereby use the tray to transport the items thereon. The design of the tray 1 having the lifting handle 30 at the top of the central post 20 means that the centre of mass of the tray 1 and items combination, is lower than the point which the tray is lifted from. This, combined with a single point of lifting, results in the items being more stable and, if they are drinks, much less vulnerable to spillage if the tray 1 is

knocked in transit. This is due to the pendulous nature of the tray 1, as any lateral knock to the tray will to swing it about the lifting point of the handle 30, rather than jolt it violently sideways. Furthermore, the side walls 12 help to stabilise the items and prevent them from toppling over. The overall width of the tray 1 is also a lot less than that of standard trays found in, for example, pubs and/or restaurants, so is 5 less likely to get knocked in the first place when it is being used to transport items through crowds. There is also the added advantage that the tray is designed to be lifted using only one hand, which leaves the other hand free. Normal trays require 10 the use of both hands for optimum stability, which can mean that negotiating doors for example, can be tricky.

The tray 1 is dimensioned such that one can be stacked on top of another, as shown in Figure 6. One tray 1 is placed on top of another 1' so that the lifting handle 30' and hollow post 20' of the lower tray 1' is received inside the hollow post 20 of the 15 upper tray 1, and the floor 11 of the upper tray 1 rests on the top of the perimeter wall 12' of the lower tray. It is important that the hollow posts 20/20' are tapered inwardly towards their top ends as shown in the drawings for this stacking function to work properly. This means that many such trays 1,1' can be stored with a more efficient use of space.

20 The collar 40 can be formed with or have markings thereon to enable it to be used as part of a game, such as a drinking game, to be played by the drinks purchasers once their drinks have been delivered to them. For example, the collar 40 could have a pointer thereon so that if it is spun around, when it comes to a stop, it would 25 align with one of various markings that could be provided on either the post 20, or on the floor 11 or wall 12 of the base 10. These markings on the post 20 or base 10 could either be formed or printed directly thereon, or could be printed on separate covers that could fit over the post 20 or base 10, making them easily replaceable. Alternatively, the collar 40 can be used as advertising space. Since the collar 40 can 30 easily be removed by removal of the lifting handle 30 from the top 22 of the post 20, the type of game or advertising on the collar 40 can easily be changed.

The feet 14 on the base 10 are intended to elevate the tray 1 slightly above the level of the surface on which it is placed. This is particularly useful for pub or bar environments in which it can be used, as table/bar surfaces can be wet with spilt drinks, so the feet 14 prevent the whole of the outer side of the floor 11 of the base 5 10 from getting wet and sticking to the surface.

The tray 1 can be produced using a moulded plastic material, and one particular advantage is that the base 10 with its peripheral wall 12 and feet 14, and the post 20, can all be moulded as one unitary body. Furthermore, the lifting handle 30 10 comprising the hoop 31, the shaft 32 and snap-fit connection 33 can also be moulded as one unitary body. The means that the whole tray 1 comprises only three separate components, namely the base 10/post 20 combination, the lifting handle 30 and the rotatable collar 40 (see Figure 5). This also means that the tray can be manufactured in high volumes at a low cost.

15 The tray 1 can also be made from metal, e.g. aluminium, resin, glass wood or wood derivative. Each of these alternative materials still allows the base 10, wall 12 and post 20 to be produced as one unitary body. A metal version could be produced as a sheet and press-stamped over a die to the required shape, wood or certain wood 20 derivatives could be milled and/or drilled into shape and resin, glass or certain other wood derivatives could be moulded into shape.

A further unillustrated embodiment, intended to be covered within the scope of the claims hereafter could comprise the base 10, post 20 and lifting handle 30, but 25 without the collar 40, wherein the entire tray 1 is formed as one single unitary component. Obviously, with such a tray 1, the lifting handle 30 would not be able to rotate relative to the base 10 as with the embodiments described previously, but the tray 1 would be stackable as described above, and would be even cheaper and easier 30 to manufacture in large numbers. Such a unitary tray could be made from any of the materials mentioned above.

Claims

1. A tray having a handle portion and a peripheral base surrounding the handle portion to support items placed on the tray, the handle portion protruding upwardly from the peripheral base.

2. A tray according to claim 1 wherein the base has a wall extending substantially vertically upwards from the perimeter of the base to prevent items from falling off the base.

10 3. A tray according to claim 1 or claim 2 wherein the handle portion comprises a post extending vertically upwards from the centre of the base and a lifting handle located at the top of said post.

15 4. A tray according to claim 3 wherein the top of the post is vertically higher than the top of the wall.

5. A tray according to claim 3 or claim 4 wherein the post tapers inwardly towards its top.

20 6. A tray according to any of claims 3 – 5 wherein the post is hollow.

7. A tray according to claim 6 wherein the base portion has an aperture in the centre thereof of the same dimensions as the area of the base of the post such that 25 the hollow interior of the post is accessible from the underside of the base through said aperture.

8. A tray according to any of claims 3 – 7 wherein the top of the post has an aperture therein.

30 9. A tray according to any preceding claim wherein the lifting handle comprises a circular hoop portion, a shaft portion connected to the hoop portion, and a snap-fit connection on the other end of the shaft distal from the hoop.

10. A tray according to claim 9 wherein the snap-fit connection comprises a plurality of resiliently deformable arms extending parallel to each other in the axial direction of the shaft, an end of each arm distal from the shaft having a projection 5 extending laterally outwards from the arm.

11. A tray according to claim 9 or claim 10 wherein the hoop portion, the shaft and the snap-fit connection means are all integrally formed.

10 12. A tray according to any preceding claim wherein the base portion is circular.

13. A tray according to any preceding claim wherein the post is circular in cross-section.

15 14. A tray according to any of claims 9 – 13 including a rotatable collar between the post and the lifting handle.

15. A tray according to claim 14 wherein the collar has a central aperture therethrough to receive the shaft of the lifting handle to retain the collar in position 20 between the post and the lifting handle.

16. A tray according to claim 14 or claim 15 wherein the collar has markings on the outer surface thereof.

25 17. A tray according to any of claims 14 – 16 wherein the collar is circular.

18. A tray according to any preceding claim wherein the base portion has a plurality of feet on the underside thereof.

30 19. A tray according to claim 14 wherein the feet are formed integrally with the base.

20. A tray according to any of claims 3 – 19 wherein the base, the post and the wall are all formed as one unitary component.

21. A tray according to any of claims 1 – 7 wherein the entire tray is formed as
5 one single unitary component.

22. A tray according to claim 20 or claim 21 wherein the unitary component is
moulded.

10 23. A tray according to any preceding claim made from plastic, glass, a wood
derivative or resin.

24. A tray according to any of claims 1 – 21 wherein the tray is made from metal,
wood or a wood derivative.

15 25. A tray substantially as described herein with reference to the accompanying
drawings.

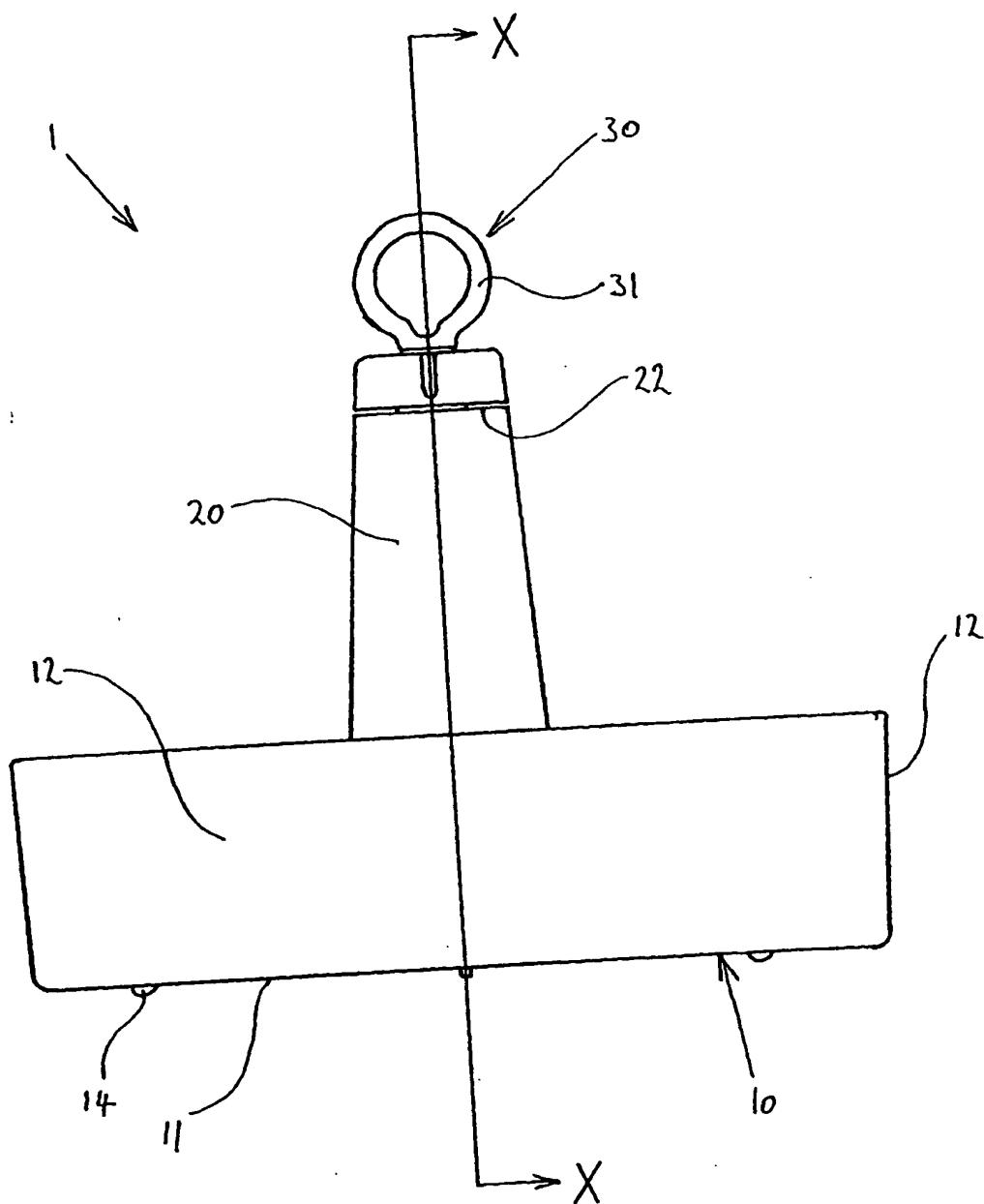


FIGURE |
SUBSTITUTE SHEET (RULE 26)

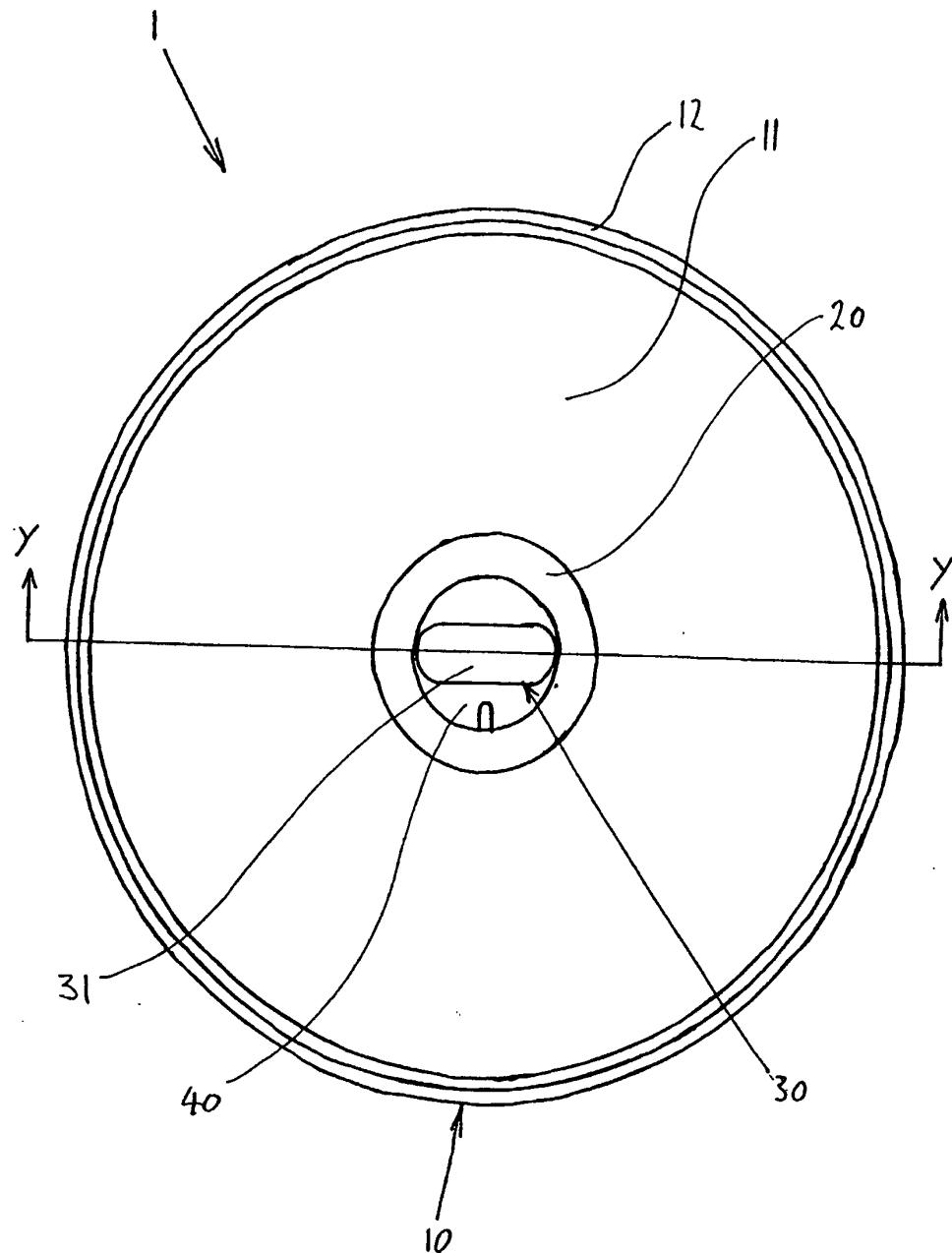


FIGURE 2.

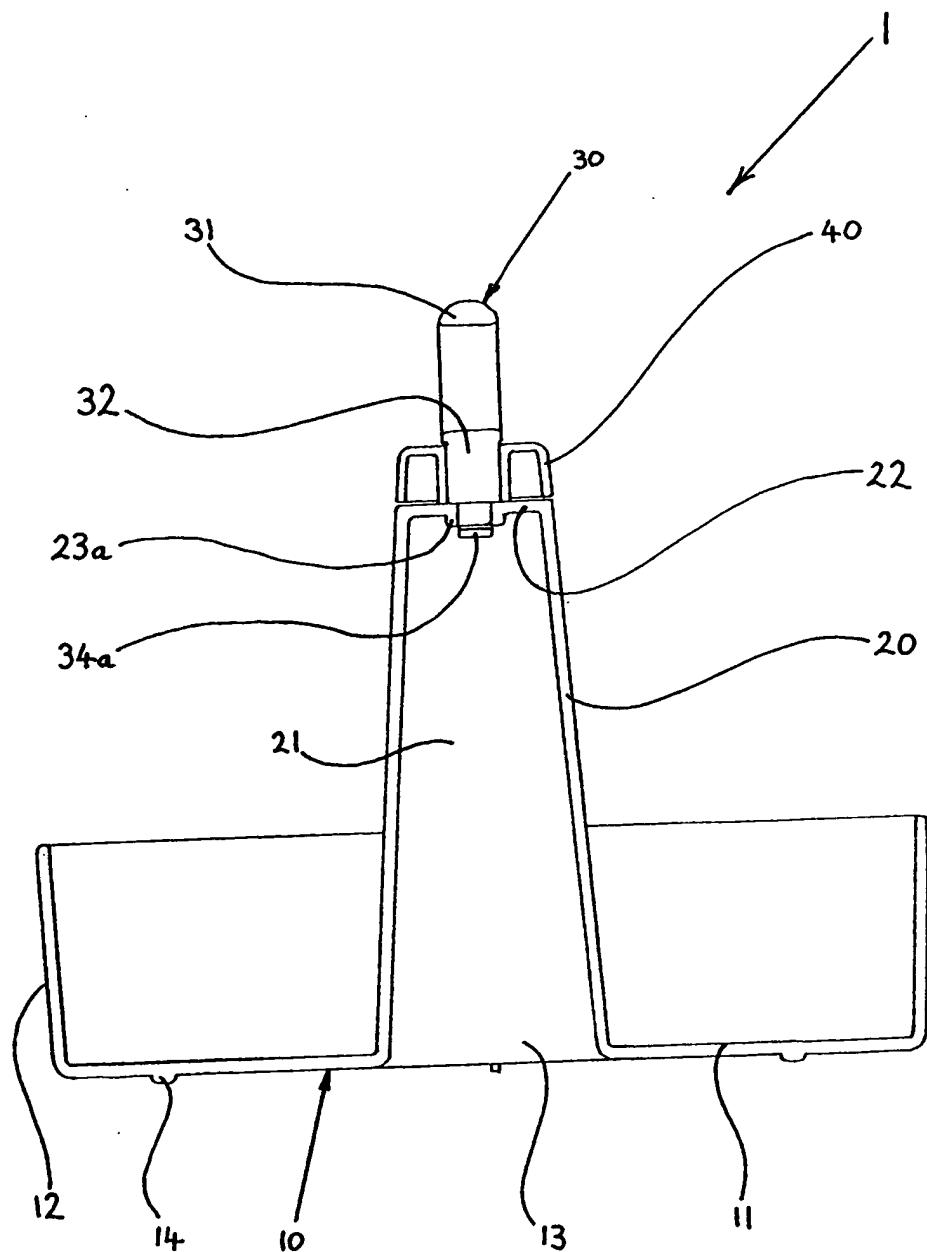


FIGURE 3

SUBSTITUTE SHEET (RULE 26)

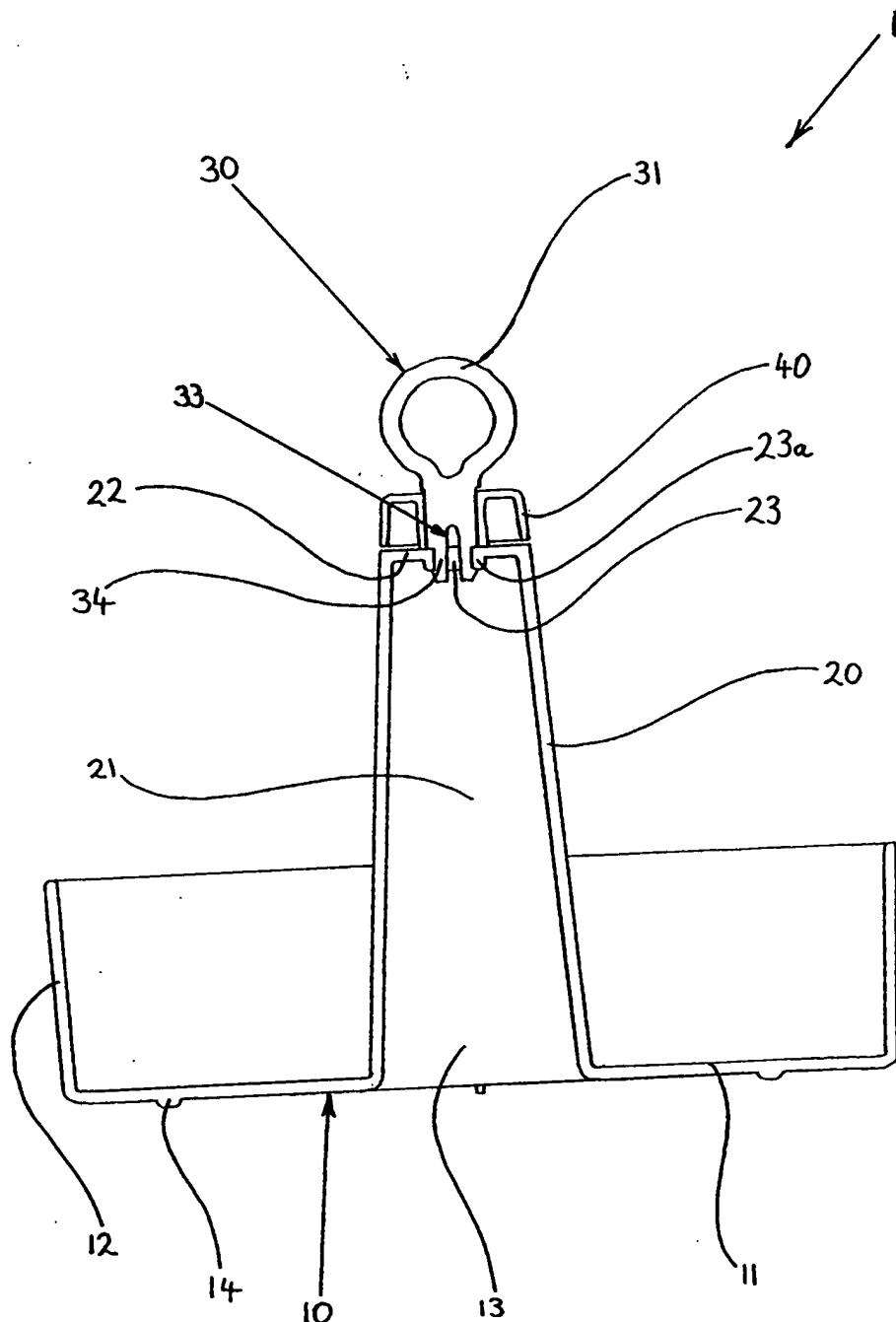


FIGURE 4

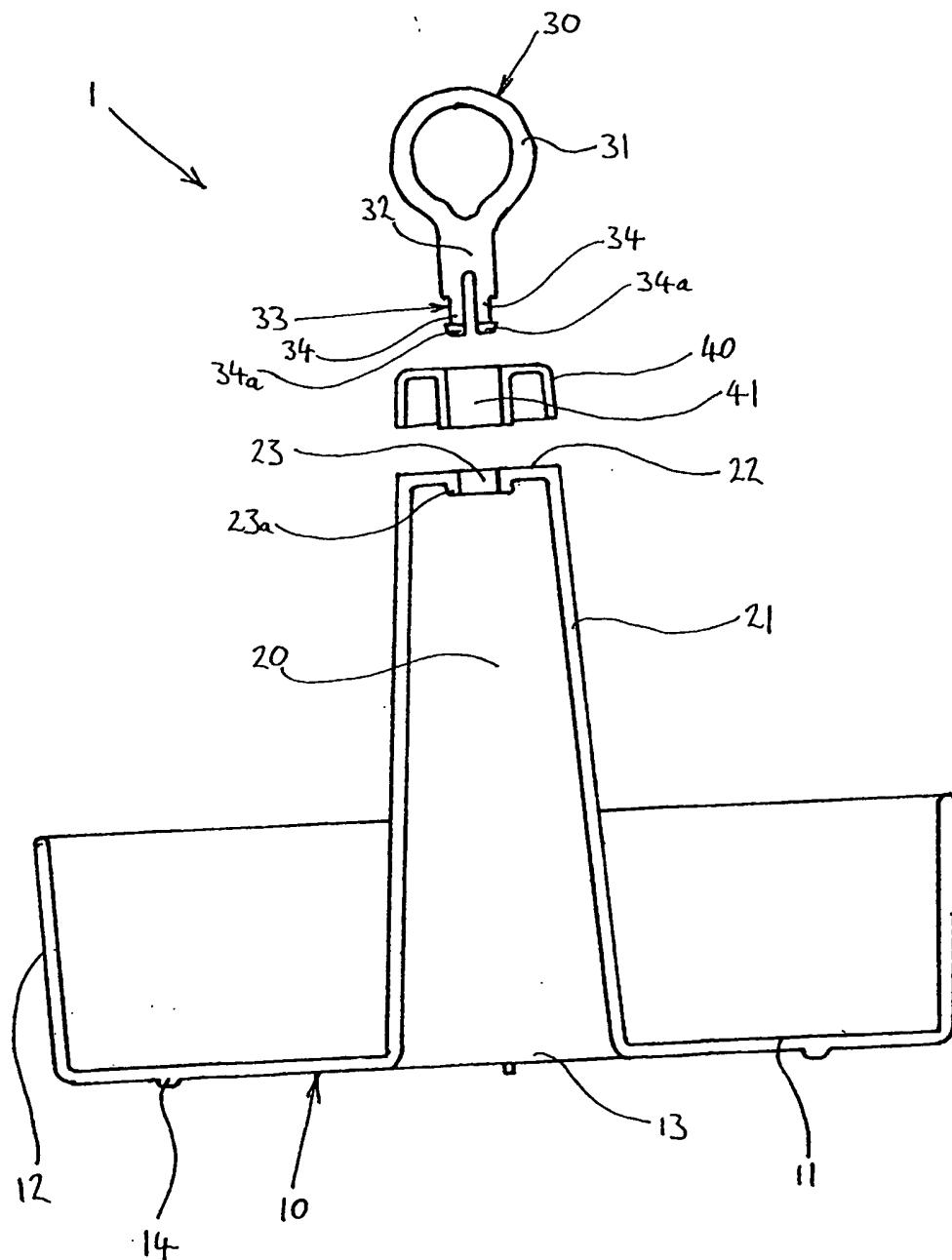


FIGURE 5

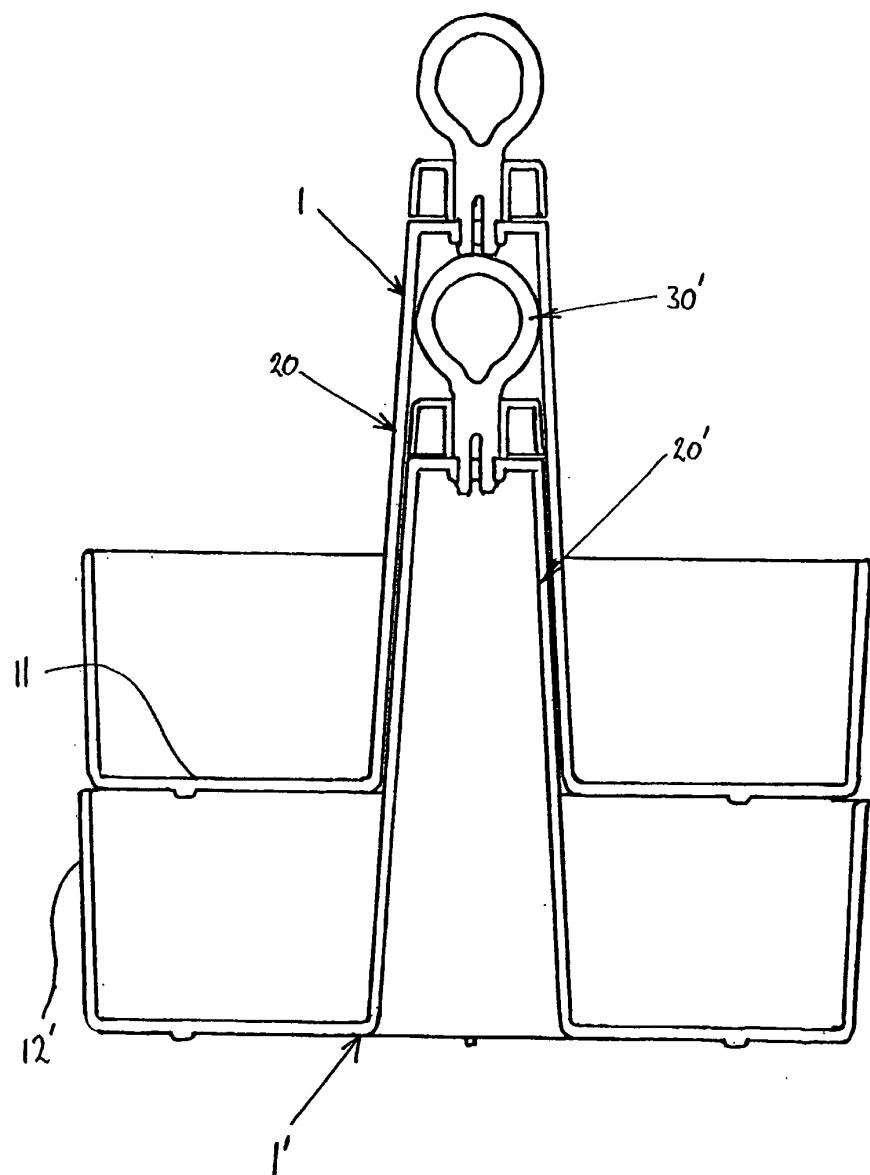


FIGURE 6.

INTERNATIONAL SEARCH REPORT

International Application No
/GB2004/001388

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A47G23/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A47G B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1 329 218 A (EMSAWERK WULF CO) 5 September 1973 (1973-09-05) page 2, line 10 - page 3, line 10; figures -----	1-8, 12-24
X	US 3 951 079 A (TOLLESON MORRIS L) 20 April 1976 (1976-04-20) column 2, line 26 - column 5, line 31; figures -----	1-24
X	US 3 261 498 A (GERALD ERICKSON) 19 July 1966 (1966-07-19) column 2, line 60 - column 4, line 72; figures ----- -/-	1,2, 9-11,13, 18-24

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

15 June 2004

05/07/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Vistisen, L

INTERNATIONAL SEARCH REPORT

ntional Application No
/GB2004/001388

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 804 306 A (BENOIST GILLES JEAN CHARLES) 3 August 2001 (2001-08-03) page 4, line 1 - page 5, line 31; figures -----	1-4, 6-8, 12, 13, 18-24
A	US 4 311 237 A (HAYES JOHN C) 19 January 1982 (1982-01-19) -----	

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 25

Rule 6.2a PCT

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

INTERNATIONAL SEARCH REPORT

National Application No

/GB2004/001388

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
GB 1329218	A	05-09-1973	DE FR NL	2200681 A1 2167922 A5 7300145 A ,B	19-07-1973 24-08-1973 10-07-1973
US 3951079	A	20-04-1976	NONE		
US 3261498	A	19-07-1966	NONE		
FR 2804306	A	03-08-2001	FR	2804306 A1	03-08-2001
US 4311237	A	19-01-1982	NONE		